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## Musical Information.

### AN ESSAY

ON THE

### DERIVATION AND PROGRESS OF MUSIC.

It would be as absurd as profane to attempt tracing the origin of Music\* to any other source than as immediately derived from Him, "in whom all the treasures of wisdom and knowledge" are concentrated. To mankind, indeed, may be ascribed the reducing of the science† to practice, by a few plain rules, which are admirably adapted to affect our senses.

The perfection‡ to which Music has arrived could not have been accomplished but by the subsequent application of the most liberal minded.

Moses, who "was instructed, not only in all the wisdom of the Egyptians," but well acquainted with the history of the patriarchs, informs us of Lamech (who lived fifty-six years before the death of Adam,) whose children were professional musicians in the city of Enoch, in Asia; and this period is the first to which the invention of musical instruments can be traced by man.

In the book of Genesis, we are informed of Laban reproving Jacob for going privately away with his family, having deprived him of an opportunity of sending him away "with mirth and with songs, with tabret and with harp."

Music, having progressively risen in its dignity, became of particular use among the people in accompanying the traditional narratives of the exploits of their ancestors.

The ancient writings of the Israelites produce many instances of their several institutions and establishments for teaching Music in the highest degree of splendour;

\* *Music.* The word is derived from the Greek word *Musa*, whence comes *Musica*, and our term Music. It is of Egyptian origin, being derived from *moys*, which in their language signifies *water*—because, they say, Music was first invented near the banks of the river Nile, which was covered with such a vast number of reeds and rushes, that they furnished the shepherds with an abundance of materials for the formation of musical instruments.

† *Science.* That it is a science doth thus appear, because it hath *subject*, *principles*, and *affections*—which three things are required to complete a science.

‡ *Perfection.* The word does not mean another distinct character than what was before possessed, but a more exalted degree of the same.

with their particular attention, upon every revolution and restoration of their government, to reinstate this science in all its lustre. They likewise contain such undeniable evidences of its absolute necessity in their highest acts of devotion, as carry a conviction that it was not submitted to in compliment to custom ; but that it raised the soul to the most exalted raptures of devotion.

The Music of the antediluvians was handed down by Noah to his sons, who immediately after the flood, carried it along with them into Chaldea ; and, nearly two hundred years after that, into Egypt, where it continued in a state of imbecility, and without principles, until the time that Pythagoras left Greece to visit Egypt.

Pythagoras, of Samos, lived in the reign of Tarquin, the last king of the Romans, in the year of Rome 220 ; or according to Livy, in the year of the world 3472. He was the first who took the name of Philosopher—that is, a lover of wisdom. Some suppose that he conversed with Daniel and Ezekiel at Babylon, and derived his philosophy from the books of Moses ; but this is mere conjecture. He made unity the principle of all things—and, by an extraordinary reach of discernment, fixed upon the first fundamental principles\* relative to this science. Struck by the different sounds which issued from the hammers of a forge, that came into unison† at the fourth, fifth, and eighth percussions, he concluded that this must proceed from the differences of the weights in the hammers : he had them weighed, and found that he had conjectured right. Upon this he wound up some musical strings, in number equal to the hammers, and of a length proportioned to their weights, and found at the same intervals that they corresponded with the hammers in sound ! It was upon the same principle he devised the monochord—an instrument consisting of one string, yet capable of easily determining the various relations of sound. “ A musical string,” says he, “ yields the very same tone with any other of twice its length : because the tension‡ of the latter, or the force whereby it is extended, is quadruple to that of the former—and the gravity of one planet is quadruple to that of any other which is at double the distance. In general, to bring a musical instrument into unison with one of the same kind, shorter than itself, its tension ought to be increased in proportion as the square of its length exceeds that of the other ; and that the gravity of any planet may become equal to that of any other nearer the sun, it ought to be increased in proportion as the square of its distance exceeds that of the other. If, therefore, we would suppose musical strings stretched from the sun to each of the planets, it would be necessary, in order to bring them all in unison, to augment or diminish their tension, in the very same proportion as would be requisite to render the planets themselves equal in gravity.”—This, in all likelihood, gave foundation to the reports, that Pythagoras drew his doctrines from the spheres. Thence Music became the first and last study of the day with his pupils : on quitting their bed, they roused their minds with the sound of the lyre, in order to make them more fit for the actions of the day ; and at night resumed the lyre, in order to prepare themselves for sleep by calming their tumultuous thoughts.||

Solon mentions Music as the first cultivation for the minds of children—Socrates and Plato recommend it as worthy of being cultivated, not only by their disciples, but by the best regulated states ; and the latter says, that “ it has as great influence over the mind, as the air has over the body ; and that no innovation could be made in

\* The theoretical principles of Music are either *remote* or *proximate*. The remote are such as are taken from the metaphysics and physics : for, from the metaphysics are taken principles of unity, beauty, grace, comeliness, perfection, order, &c. &c. and from the physics, motion, place, quantity, quality, and the time of a natural body—also of airs and sounds, differences, multiplications, perception, and also the passions. From the ethics are taken principles of virtue and moral beatitude—from poetry, the principles of rhyme and verse.

† Two notes struck at the same time, which yield the same tone or sound.

‡ A chord or string gives a graver or more acute sound, as it is in a greater or less degree of tension.

|| According to the Pythagorean doctrine, the human soul itself consisted in harmony, and existed in a former state : we need not, therefore, be surprised that they conceived it to be so easily influenced by Music, which, they thought, naturally tended to revive this primitive harmony.

the modes or laws of Music—(so he calls them)—without producing a proportionable change in the civil constitution.”

Socrates, one of the greatest heathen worthies, and first of the Grecian sages, thought it no way derogatory to his high reputation of virtue, even at an advanced age, to learn to play on the lyre, or to give a public acknowledgment of his skill, by performing at an entertainment given by Xenophon. In short, throughout all Greece, to say a man was unacquainted with music, was to rank him among the most illiberal. Shakspeare, in his Merchant of Venice, has caught up this idea—

“The man that hath no music in his soul,  
And is not mov'd with concord of sweet sounds,  
Is fit for treasons, stratagems, and spoils.”

The Grecians, and particularly the Arcadians, enforced the study of it by law, regarding it as indispensably necessary to the common welfare. One would naturally imagine, that a science so generally cultivated must have arrived at perfection very early; yet it remained without fixed principles until the time of Pythagoras.

Till this time, Music was so vague and uncertain, that it required an extraordinary effort of genius to reduce it to method and order. It was Pythagoras who precisely determined the proportions which sounds bear one to another, and regulated harmony upon mathematical principles; but he let the precision of his mind carry him too far, in subjecting Music to the judgment of reason alone, and admitting no pauses or rests but such as had an arithmetical or geometrical proportion in them. Aristoxenes, the disciple of Aristotle, thought on the contrary, that this subject came entirely within the verge of hearing, and that the ear was the only judge of sounds. He therefore regulated the order, the unison, and break of tones, solely by the judgment of the ear; and his system prevailed for some time in Greece. He contended that unison was the first and greatest of concords, and the foundation of all the rest. But there were various opinions at this period on the subject. Notwithstanding that many of the ancients were of the same opinion with him; yet others denied it was any concord at all, maintaining it only to be that in sound which unity is in numbers. Others restrained the word concord to intervals, and made it include a difference of tune.

Olympus, a Phrygian, came some time after to Athens, and invented a stringed instrument which gave semi-tones, whereby he introduced so many new graces into Music, as gave it entirely another effect. He joined Aristoxenes, appealing for the merit of his system to the decision of the ear.

At length the famous Ptolemy, a mathematician of Pelusium, in Egypt, appeared. With superior spirit, he equally disclaimed the partiality of both sides. He took a middle course, asserting that sense and reason had a joint right to judge of sounds. He accused the Pythagoreans of fallacy in their speculations, with respect to proportions; as well as of folly, in so disregarding the decision of the ear as to refuse it that kind of harmony which was agreeable to it, merely because the proportion of it did not correspond with their arbitrary rules. And he charged the partizans of Aristoxenes with an absurd neglect of reasoning—clearly pointing out that, though they were convinced of the difference of grave and acute tones, and of the proportions subsisting between them, and that those proportions invariably depended upon the several lengths of the musical chords; yet they never took the trouble of considering this so as to enter into the reason of it. He therefore determined, in deciding upon the principles of harmony, to make use not only of reason, but also of the ear, as being of aid to one another. In consequence of this decision, he laid down a sure method for finding out the proportions of sounds.—Had the ancients done no more with regard to Music, than made the discoveries already mentioned, the science must have been infinitely more obliged to them, than it could possibly be to those who succeeded them, for what addition they afterward made.

In Ptolemy's eleventh book relative to Music, he says, that “by nature, voices



could be made neither more nor less than seven." The Egyptians and Grecians have approved the seven voices, by the number of seven vowels ; and Demetrius Phalerius, the Egyptian, informs us, that they celebrated their gods by the modulated enunciation of seven vowels to so many voices of Music. The lyre, cithren, and certain other musical instruments, which were strung with strings, were anciently of seven strings, without doubt by reason of the seven voices. The chords of the lyre were of old in this order, and known by these names ; *hypate*, *parthypate*, *hypermesse*, *messe*, *paramesse*, *paranete*, *nete*. The first is called *hypate*, not only for the acuteness of the voice, but also for a certain excellency and virtue, for the word signifies a certain degree of eminence and dignity ; *nete*, or *neate*, that is, the last ultimate, &c. Neither have the chords been known only by these names, but the sounds themselves—for instance : *hypate* hath to himself *bi*, and soundeth acutely—*parthypate*, *la*, and doth lullaby—*hypermesse*, *sol*, and doth sound sweetly—*messe*, *fa*, and doth sound temperately—*paramesse*, *mi*, doth delight pleasantly—*paranete*, *re*, and doth grate tremulously—*nete*, *ut*, and doth as it were low hoarsely. Furthermore, the ancients did attribute the seven planets to so many chords of the lyre, in this order : to Saturn, *hypate*—to Jupiter, *parthypate*—to Mars, *hypermesse*—to Sol, *messe*—to Venus, *paramesse*—to Mercury, *paranete*—and to Luna, *nete* ; in which comparison the acuteness and gravity of the chords and planets correspond exactly.

The four moods into which the ancients had divided their system of Music, were—the Doric, the Lydian, the Phrygian, and the Æolian.

Plato was a great admirer of the Doric\* mood, (which was the first of the authentic moods of the ancients,) on account of its character, which is to be severe, tempered with gravity and joy ; and was properly used on religious occasions, and also in the time of war, it being masculine, and would suffer no repulse. It begins *d*, *la*, *sol*, *re*. It was also judged proper to preserve good manners, and was allowed in Plato's commonwealth. But as the nations became more and more degenerate, Music suffered an equal declension from its primitive purity. At this period there had been many complaints of the musicians, for neglecting the ancient moods, and adopting other methods which had not the same power over the passions.

The Doric was composed of those sounds which express the grave, the sober, the chaste, the warlike—that sort of valour which was not the sudden effort of fury, but a steadfast, determined resolution, one which would suffer no repulse. This was in the highest esteem among the Lacedemonians, and which they made use of in their battles, to the sound of voices and flutes.

The Lydian was that which soothed the soul to pleasure, (that tender, gentle sort, in which mirth had no share,) to languishments, elegiac complaints, and lamentable subjects. The invention of it was attributed to Carius, the son of Jupiter, after he heard the Muses lament the death of Python, who was slain by Apollo.

The Phrygian was composed of those sounds, collected together, which aroused to rage, and were expressive of fury. This was divided into two parts ; the second of which, whose effects were quite opposite, counteracted the first, and restored to reason those who had been affected by it, and obtained the character of Sub-Phrygian.

The Æolian was chiefly made use of for tender and amorous airs. It seemed principally to have been calculated for the pleasures of the table.

Porphry and Ptolemy describe instruments resembling the lute and theorbo, having a handle with keys belonging to it, and the strings extended from the handle over a concave body of wood.

There is to be seen at Rome an ancient statue of Orpheus, with a musical bow in his right hand, and a kind of violin in his left. In the commentaries of Philostrates, by Vigenore, is a medal of Nero, with a violin upon it.†

In Tertullian we meet with a very full and clear description of an hydraulic organ,

**Doric.** It was called Doric from an ancient people of Greece, inhabiting the country near Mount Parnassus.

\* I am not certain whether Buonaparte has not transmitted these precious remains of antiquity to Paris, with the other monuments of the arts, of which he plundered the imperial city of the Cæsars.

invented by Archimedes, which was so far from being inferior, in any respect, to ours, that it plainly exceeded them in its mechanism, as being made to play by water. "Behold," says Tertullian, "that astonishing and admirable hydraulic organ of Archimedes, composed of such a number of pieces, consisting each of so many different parts, connected together by such a quantity of joints, and containing such a variety of pipes for the imitation of voices, conveyed in such a multitude of sounds, modulated into such a diversity of tones, breathed from so immense a combination of flutes; and yet, all taken together, constitute but one single instrument."

Let any unprejudiced person acquaint himself with the writings of the ancients relative to Music, and he will clearly discover that they were by no means deficient in the doctrine of harmony, or consisting notes; yet it is true that they did not much practise compound Music; but that proceeded from their not liking it: for Aristotle, after asking why one instrument, accompanied only by a single voice, gave more delight than that very voice would do with a greater number, replies, "that a multitude of instruments only obstructed the sound of the song, and hindered it from being heard." Yet the same author, in another place, expressly says, "that Music, by the combination of the bass and higher tones, and of notes long and short, and of a variety of voices, arrives at perfect harmony." And in the following chapter, speaking of the revolutions of the several planets as perfectly harmonizing with one another, they being all of them conducted by the same principle, he draws a comparison from Music to illustrate his sentiments: "Just as in a chorus," says he, "of men and women, where all the variety of voices, through all the different tones from the bass\* to the higher notes, being under the guidance and direction of a musician, perfectly correspond with one another, and form a full harmony."

Aurelius Cassidorus defines symphony to be the art of so adjusting the bass to the higher notes, and those to it, through all the voices and instruments, whether wind or stringed, that thence an agreeable harmony may result; and Horace speaks expressly of the bass and higher tones, and the harmony arising from their concurrence. Many respectable authors have cursorily treated of it. Macrobius speaks of five notes, among which he observes, "however different they be among themselves, they come to the ear as if they altogether composed but one sound."

Ptolemy, speaking of the monochord, calls it "a mighty simple instrument, as having neither unison, accompaniment, variety, nor complication of sounds."

Seneca, in one of his letters, says to his friend: "Do not you observe how many different voices a band of music is composed of? There you have the bass, the higher notes and the intermediate, the soft accents of women and the tones of men, intermingled with the sounds of flutes, which, however separately distinct, form altogether but one harmony of sound, in which each bears a share."

Plato sufficiently makes it appear that he knew what harmony was, when he says, that "Music is a very proper study for youth, and should employ three years of their time;" but that "it is improper to put them upon playing alternately in concert, it being enough for them if they can accompany their voice with the lyre: and the reason he gives for it is, that "the accompaniment of various instruments, and the bass with those of a higher key, and the variety and even opposition of symphonies, when music is played in division, can only embarrass the minds of youth."

All these testimonies, therefore, uniting in favour of the harmony of the ancients, ought not to leave us the least doubt respecting their musical acquirements. We have seen the reason why they did not use harmony in their concerts: one fine voice alone, accompanied with one instrument, regulated entirely by it, pleased them better than mere music without voices, and made a more lively impression upon their feelings and minds.

Hyagnis is said to have been the inventor of the flute. His son, Marsyas, was so vain of his own abilities, that he ventured to challenge Apollo himself to a trial of

\* Bass. The bass note is called the standard of tune, because it governs and explains all the other notes, and is the predominant, to which all the rest have a reference.

skill; and would certainly have come off victorious, had not Apollo saved his honour by joining his voice with the sound of his lyre; but so greatly was he incensed with the youth's presumption, that immediately after the dispute he flayed him alive.

It plainly appears that the flute was carried to so high a degree of perfection by the ancients, that there were various kinds of them, and so different in sound, as to be wonderfully adapted to express all manner of subjects.

Chiron, the Pælethronian, the son of Saturn and Phyllina, was another great proficient in Music. He was the inventor of medicine, was famous for his knowledge in philosophy, and had for his pupils Esculapius, Jason, Hercules, Theseus, Achilles, and several other heroes.

Whoever carefully examines the writings of the ancients, will clearly discover they have the whole merit of laying down the first principles of Music.

The writings of the Pythagoreans, of Aristoxenes, Euclid, Aristides, Nichomachus, Plutarch, and many others, even such of them as still remain, contain in them every theory of Music yet published; and the merit of the ancients is generally most controverted by those who are least acquainted with them. They knew, as well as us, the art of noting their tunes, which among them was called the *parasemantic*, or *semi-otic*, performed by means of entire letters, either contracted or reversed, placed upon a line parallel to the words, and serving for the direction, the one of the voice, and the other of the instrument: and the scale itself, which the Encyclopedia says was invented by Guido Aretin, is no other than the ancient one of the Greeks, a letter enlarged, and that which Aretin might have taken from the Greek manuscript, written above eight hundred years ago, which Kirchner says he saw at Messina in the library of the Jesuits, wherein he found the hymns noted just as in the manner of Aretin.

As to the effects which Music produced, and the manner of performing it, so far were the ancients from falling short of the moderns in these respects, that as to the former, after reducing the accounts we have of it to the most rigid conformity to truth, they still appear therein to have gone far beyond us; and as to the latter, though it be alleged that their instruments were not as complete as ours, and that they knew not, nor put in practice, those divisions in harmony which enter into our concerts, yet this seems to be a groundless objection. The lyre, for instance, was a very harmonious instrument; and in Plato's time was so constructed, and so full of variety, that he regarded it as dangerous, and too apt to relax the mind. In Anacreon's time it had already obtained forty strings.

But, though the theatrical declamation of the ancients was composed and set to music, yet we are not to imagine, that it was the same with our musical singing, for it had neither divisions, recitative, continued quaverings, nor any other characters of singing; in effect it was no more than a harmonious manner of declaiming, or speaking with propriety.

The Greeks, it is well known, had such a nice and delicate ear, that the expression of an *Attic ear* passed into a proverb for that of a musical one.

Phrynis may be considered as the author of the first innovations made in the ancient Music, with regard to the cythera. To the seven strings, of which this instrument formerly consisted, he added other two; the compass and modulation of the Music too, which was noble and manly, he changed into soft, tender, and effeminate airs. With this degeneracy Aristophanes upbraids him, in his comedy of "*The Clouds*," in which *Justice* speaks of the ancient education of youth in the following terms: "They went to the house of the player upon the cythera, where they learned the hymn of the dreadful Pallas, or some other song, which they sung according to the harmony delivered down to them from their ancestors. If any of them ventured to sing in a wanton manner, or to introduce any inflections of voice like those which prevail in the airs of Phrynis, they were severely punished."

But this addition which Phrynis had made to the strings of the cythera was soon after retrenched, and that instrument reduced to its former simplicity: for having brought it along with him to some of the public games at Lacedemon, he was seized by Ecprepes, one of the Ephori, who obliged him to cut off two of the strings—



leaving it, however, to his choice, whether it should be the two highest or the two lowest. Such likewise was the treatment which Timotheus met with on a similar occasion.

We read in the first book of Chronicles of four thousand of the Levites praising the Lord with instruments which king David made. Solomon followed the prosecution of his father's plan, and established such a band of musicians as, for dignity, number, and regularity, greatly excelled all that had gone before them, and which has never been equalled to this day. This band was divided into several distinct companies, each of which had a chief or captain, who in all public performances directed and led the way; and, to produce the greater concord and harmony, there was a proportionate number of men and women, the mixture of whose voices formed a pleasing melody. Two hundred and eighty-eight of the most learned among them were appointed to instruct the rest in vocal and instrumental music.—It is the decided opinion of those who have investigated this subject with the most deliberate accuracy, care, and candour, that they had no divisions of many notes to one syllable, no fugues, no repetitions of words—all of which, however, are justly ranked among the beauties and graces of modern Music. They sang the words plainly and uniformly, as they lay before them in the psalm.

Music obtained, during the reign of Solomon, the highest degree of perfection it had ever reached; and in that state it continued till the Babylonish captivity, when it was so far lost, that, notwithstanding the vigorous endeavours of Ezra and Nehemiah upon the rebuilding of the temple, it could never be restored to its former eminence among the Jews.

Since the Christian era, sacred Music has perhaps assumed a grandeur formerly unknown to the science. But what it has gained in this respect, has been lost in characteristic simplicity. In this elevation of the science, our own Purcell, Handel, Arne, &c. have taken the lead in the musical world, and must continue to ages unknown, its illustrious ornaments.

BROWNE.

## MALCOLM'S TREATISE ON MUSIC.

[CONTINUED FROM PAGE 59.]

Sound may move through various degrees of acuteness in a continual flux, so as not to rest on any degree for any assignable, or at least sensible time; which the ancients called the continuous motion of sound, proper only to speaking and conversation. Or, 2do. it may pass from degree to degree, and make a sensible stand at every pitch, so as every degree shall be distinct; this they called the discrete or discontinued motion of sound, proper only to music or singing. But that there may be no obscurity here, consider, that as the ideas of motion and distance are inseparably connected, so they belong in a proper sense to bodies and space; and whatever other thing they are applied to, it is in a figurative and metaphorical sense, as here to sounds; yet the application is very intelligible, as I shall explain it. Voice or sound is considered as one individual being, all other differences being neglected except that of acuteness and gravity, which is not considered as constituting different sounds, but different states of the same sound; which is easy to conceive: and so the several degrees or pitches of tune, are considered as several places in which a voice may exist. And when we hear a sound successively existing in different degrees of tune, we conceive the voice to have moved from the one place to the other; and then it is easy to conceive a kind of distance between the two degrees of places; for as bodies are said to be distant, between which other bodies may be placed, so two sounds are said to be at distance, with respect of tune, between which other degrees may be conceived, that shall be acute with respect to the one, and grave with respect to the other. But when the voice continues in one pitch, though there may be many

interruptions and sensible rests whereby the sound doth end and begin again, yet there is no motion in that case, the voice being all the time in one place. Now, this motion, in a simple and proper sense, is nothing else but the successive existence of several sounds differing in tune. When the successive degrees are so near, that like the colours of a rainbow, they are as it were lost in one another, so that in any sensible distance there is an indefinite number of degrees, such kind of succession is of no use in music; but when it is such that the ear is judge of every single difference, and can compare several differences, and apply some known measure to them, there the object of music does exist; or when there is a succession of several sounds distinct by sensible rests, though all in the same tune, such a succession belongs also to music.

From this twofold motion explained, we see a twofold continuity of sound, both subject to certain and determinate measures of duration; the one is that arising from the continuous motion mentioned, which has nothing to do in music: the other is the continuity or uninterrupted existence of sound in one degree of tune. The differences of sounds in this respect, or the various measures of long and short, or (which is the same at least a consequence) swift and slow in the successive degrees of sound, while it moves in the second manner, make a principal and necessary ingredient in music; whose effect is not inferior to any other thing concerned in the practice; and is what deserves to be very particularly considered, though indeed it is not brought under so regular and determinate rules as the differences of tune.

5. Sounds are either simple or compound; but there is a twofold simplicity and composition to be considered here; the first is the same with what we explained in the last article, and relates to the number of successive vibrations of the parts of the sonorous body, and of the air, which comes so fast upon the ear that we judge them all to be one continued sound, though it is really a composition of several sounds of shorter duration. And our judging it to be one, is very well compared to the judgment we make of that apparent circle of fire, caused by putting the fired end of a stick into a very quick circular motion; for suppose the end of the stick in any point of that circle which it actually describes, the idea we receive of it there continues till the impression is renewed by the sudden return; and this being true of every point, we must have the idea of a circle of fire; the only difference is, that the end of the stick has actually existed in ever point of the circle, whereas the sound has had interruptions, though insensible to us because of their quick succession; but the things we compare are, the succession of the sounds making a sensible continuity with respect to time, and the succession of the end of the stick in every point of the circle after a whole revolution; for it is by this we judge it to be a circle, making a continuity with respect to space. The author of the *Elucidationes Physicæ* upon D'Cartes, music, illustrates it in this manner; says he, As standing corns are bended by one blast of wind, and before they can recover themselves the wind has repeated the blast, so that the corn is standing in the same inclined position for a certain time, seems to be the effect of one single action of the wind, which is truly owing to several distinct operations; in like manner the small branches (*capillamenta*) of the auditory nerve, resembling so many stalks of corn, being moved by one vibration of the air, and this repeated before the nerve can recover its situation, gives occasion to the mind to judge the whole effect to be one sound. The nature of this kind of composition being so far explained, we are next to consider what simplicity in this sense is; and I think it must be the effect of one single vibration, or as many vibrations as are necessary to raise in us the idea of sound; but perhaps it may be a question, whether we ever have, or if we can raise such an idea of sound: there may be also another question, whether any idea of sound can exist in the mind for an indivisible space of time; the reason of this question is, that if every sound exists for a finite time, it can be divided into parts of a shorter duration, and then there is no such thing as an absolute simplicity of this kind, unless we take the notion of it from the action of the external cause of sound, *viz.* the number of vibrations necessary to make sound actually exist, without considering how long it exists; but as it is not probable that



we can ever actually produce this, *i. e.* put a body in a sounding motion, and stop it precisely when there are as many vibrations finished as are absolutely necessary to make sound, we must reckon the simplicity of sound, considered in this manner, and with respect to practice, a relative thing; that being only simple to us which is the most simple, either with respect to the duration or the cause, that we ever hear: but whether we consider it in the repeated action of the cause or the consequent duration, which is the subject of the last article, there is still another simplicity and composition of sounds very different from that, and of great importance in music, which I shall next explain.

A simple sound is the product of one voice or individual body, as the sound of one flute or one man's voice. A compound sound consists of the sounds of several distinct voices or bodies, all united in the same individual time and measure of duration, *i. e.* all striking the ear together, whatever their other difference may be. But we must here distinguish a natural and artificial composition; to understand this, remember, that the air being put into motion by any body, communicates that motion to other bodies; the natural composition of sounds is, therefore, that which proceeds from the manifold reflections of the first sound, or that of the body which first communicates sounding motion to the air, as the flute or violin in one's hand; these reflections, being many, according to the circumstances of the place, or the number, nature, and situations of the circumjacent bodies, make sounds more or less compound. This is a thing we know by common experience; we can have a hundred proofs of it every day by singing, or sounding any musical instrument in different places, either in the fields or within doors; but these reflections must be such as returning very suddenly do not produce what we call an echo, and have only this effect, to increase the sound, and make an agreeable resonance; but still in the same tune with the original note; or, if it be a composition of different degrees of tune, they are such as mix and unite, so that the whole agrees with that note. But this composition is not under rules of art; for though we learn by experience how to dispose these circumstances that they may produce the desired effect, yet we neither know the number nor different tones of the sounds that enter into this composition; and therefore they come not under the musician's direction in what is hereafter called the composition of music; his care being only about the artificial composition, or that mixture of several sounds, which being made by art, are separable and distinguishable one from another. So the distinct sounds of several voices or instruments, or several notes of the same instrument, are called simple sounds, in distinction from the artificial composition, in which to answer the end of music, the simples must have such an agreement in all relations, but principally and above all in acuteness and gravity, that the ear may receive the mixture with pleasure.

6. There remains another distinction of sound necessary to be considered, whereby they are said to be smooth and even, or rough and harsh; also clear or blunt, hoarse and obtuse; the ideas of these differences must be sought from observations; as to the cause of them, they depend upon the disposition and state of the sonorous body, or the circumstances of the place. Smooth and rough sounds depend upon the body principally; we have a notable example of rough and harsh sound in strings that are unevenly and not of the same constitution and dimension throughout; and for this reason that their sounds are very grating, they are called false strings. I will let you in few words hear how Monsieur Perrault accounts for this. He affirms that there is no such thing as a simple sound, and that the sound of the same bell or chord is a compound of the sounds of the several parts of it; so that where the parts are homogeneous, and the dimensions of figure uniform, there is always such a perfect union and mixture of all these sounds that makes one uniform, smooth, and evenly sound; and the contrary produces harshness; for the likeness of parts and figure makes a uniformity of vibrations, whereby a great number of similar and coincident motions conspire to fortify and improve each other mutually, and unite for the more effectual production of the same effect. He proves his hypothesis by the phenomena of a bell, which differs in tone according to the part you strike, and yet strike it any where there is a motion over all the parts; he considers therefore the bell as composed of

an infinite number of rings, which according to their different dimensions have different tones, as chords of different lengths have (*cæteris paribus*) and when it is struck, the vibrations of the parts immediately struck specify the tone, being supported by a sufficient number of consonant tones in other parts: and to confirm this he relates a very remarkable thing; he says, He happened in a place where a bell sounded a fifth acuter than the tone it used to give in other places; which in all probability, says he, was owing to the accidental disposition of the place, that was furnished with such an adjustment for reflecting that particular tone with force, and so unfit for reflecting others, that it absolutely prevailed and determined the concord and total sound to the tone of that fifth. If we consider the sound of a violin, and all stringed instruments, we have a plain demonstration that every note is the effect of several more simple sounds; for there is not only the sound resulting from the motion of the string, but also that of the motion of the parts of the instrument; that this has a very considerable effect in the total sound is certain, because we are very sensible of the tremulous motion of the parts of the violin, and especially, because the same string upon different violins sounds very differently, which can be for no other reason but the different constitutions of the parts of these instruments, which being moved by communication with the string increase the sound, and make it more or less agreeable, according to their different natures: But Perrault affirms the same of every string in itself without considering the instrument; he says, every part of the string has its particular vibrations different from the gross and sensible vibrations of the whole, and these are the causes of different motions (and sounds) in the particles; which being mixed and unite, as was said of the sounds that compose the total sound of a bell, make a uniform and evenly composition, wherein not only one tone prevails, but the mixture is smooth and agreeable; but when the parts are unevenly and irregularly constituted, the sound is harsh and the string from that called false. And therefore such a string, or other body having the like fault, has no certain and distinct tone, being a composition of several tones that do not unite and mix so as to have one predominant that specifies the total tone.

Again for clear or hoarse sounds they depend upon circumstances that are accidental to the sonorous body; so a man's voice, or the sound of an instrument, will be hollow and hoarse, if it is raised within an empty hogshead, which is clear and bright out of it; the reason is very plainly the mixture of other and different sounds raised by reflection, that corrupt and change the species of the primitive and direct sound.

Now, that sounds may be fit for obtaining the end of music, they ought to be smooth and clear; especially the first, because if they have not one certain and discernible tone, capable of being compared to others, and standing to them in a certain relation of acuteness, whose differences the ear may be able to judge of and measure, they cannot possibly answer the end of music, and therefore are no part of the object.

But there are also sounds which have a certain tone, yet being excessive, either in acuteness or gravity, bear not that just proportion to the capacity of the organs of hearing, as to afford agreeable sensations. Upon the whole then we shall call that harmonic or musical sound, which being clear and even is agreeable to the ear, and gives a certain and discernible tune (hence also called tunable sound) which is the subject of the whole theory of harmony.

Thus we have considered the properties and affections of sound that are any way necessary to the subject in hand; and of all the things mentioned, the relation of acuteness and gravity, or the tune of sounds, is the principal ingredient in music; the distinctness and determinateness of which relation gives sound the denomination of harmonical or musical: next to which are the various measures of duration. There is nothing in sounds without these that can make music; a just theory whereof abstracts from all other things, to consider the relations of sounds in the measures of tune and duration; though indeed in the practice other differences are considered (of which something more may be said afterward) but they are so little compared to the other two, and under so very general and uncertain theory, that I do not find they have ever been brought into the definition of music.

*To be Continued.*



## THE ART OF FINGERING.

*The manner of playing successions of thirds with the right hand.*

WHEN passages for the right hand move in thirds, they must be played as much as possible with such fingers as agree in the following double-progression, viz. the thumb and second finger, first and third finger, and second and fourth finger. However, we must observe, that when a short key happens in the place belonging to the thumb, the first finger is used instead of the thumb; though that accidental alteration must not affect the regularity of the fingers that follow.

N. B. When the second finger plays along with the thumb, or the third finger along with the first, the highest finger may be graced with a shake or turn, without incommoding the hand. And the studious practitioner may even find natural graces to the others, if necessary.

*Of improving on the Rules.*

By this it must be obvious to the diligent learner, that the whole drift of the foregoing rules is to enable us to keep the fingers down upon the keys the entire length of the notes; of the necessity of which a little experience will convince; nor will the rules for that purpose seem too intricate, if we consider, that, when passages do not exceed the compass of five notes, they are played in one fixed position of the hand, and when they exceed that number, by extending or spreading the fingers, any leap, no greater than an octave, may be easily played, and its intermediate notes, when any, with such fingers as are in the centre of the hand. That when there is found in a rising or falling progression, or scale of notes, but one single note which breaks the continuation, by contracting the fingers upon that note; we will be enabled to play them all, without quitting the key of any note before its time. And that when we have not the advantage of a rest, we must have recourse to the thumb, which, while it is playing, will give sufficient leisure, by its shortness, to the other fingers to pass over it in descending, or whilst the other fingers are playing, it will easily pass under them in ascending; and that its natural place in such keys as abound in sharps or flats is always at the right of a short key for the treble, and at the left of a short key for the bass; and in a natural key its place happens twice within the compass of an octave, viz. at the unequal distance of three and four notes alternately. These rules, I say, are neither too intricate to be understood, nor too many to be remembered; but, when they are perfectly understood, still there is room for the genius of the performer to improve upon them, by altering now and then a finger, with a view to avoid any uncouth stretch of the fingers, or to introduce a grace or a chord.

*Of applying common graces.*

Some may, perhaps, think, that the frequent application of graces would be a hinderance to the propriety of fingering; but instead of that, it is found to be a great help to it, by affording opportunities of changing the finger on the same note in the body of the grace, and thereby often prepares the true position for what follows.

*Objections against playing Fugues, in three or four parts, on the Piano-forte.*

This is a kind of playing that forty years ago was much more in vogue than at present; but, as it has still some partisans, it is necessary here to examine its nature, in order to form a judgment, whether it is fit for the piano-forte or not.

It has in this treatise all along been endeavoured to be demonstrated, that if the vibration of one string ceases some time before the vibration of another begins, in some one of the notes of a continued passage, it will not only cause an indifferent tone to come from the instrument, but the music then will not be played as it is writ-



ten. Now, if we allow these premises, it follows, that many passages in fugues and other composition, in three or four parts, cannot be played on the piano-forte, neither as they are written, nor with a good tone. And as a proof of this assertion, let us observe part of the fugue in the fourth suit of Handel's first set of lessons, (printed by J. Walsh,) beginning at the thirty-second bar; in which we shall find not only that it is impossible to hold every note its full length, according to the past rules, as it does not admit of a regularity of figures; but also by the too great nearness of the parts, the ear will confound the passages of one part with those of another, and often reduce the effect of four parts, to that of two. And when it so happens, that the music is so much interwoven, that the ear cannot reduce it to two parts, then it has often the effect of mere thorough bass.

Many music-masters have never thought of this defect, because, while they play, or hear a fugue played, they generally look upon the book, and their imagination fills up all the deficiencies of the performance. But it is not so with the unskilled person that hears it at a distance; for such a one has nothing to listen to but the effect; and when *that* is defective, then he must be displeased, rather than entertained.

As a proof of the effect that many passages in lessons of this kind must have, let the hearer turn his back to the performer, and listen to the same piece of the fugue above mentioned, played once in four parts, and then again played exactly as the ear reduces it, and he will find a great difficulty in distinguishing one from the other; unless he be directed by the tone of the instrument; which undoubtedly will be better in the last way than in the first, as the vibrations of the strings will be less interrupted by the better application of fingers.

Upon the whole, I really believe that passages with complicated parts, in the manner above mentioned, are not natural for the instrument, and ought therefore to be avoided as much as possible; witness Handel's conduct in this particular; for when he composed the above quoted suits of lessons, he was a young man, and, in all probability, followed the then reigning taste in his compositions, without reflecting any further: but when experience showed him the true power of the harpsichord, in a maturer time of life, he published his celebrated first Six Concertos for the organ or harpsichord; in which, it is worth observing, that he put only one fugue among them all; though he is, indubitably, one of the best composers of fugues that ever existed, and very fond of introducing them in all his works. And mark, that in this very fugue there are not passages enough composed in three parts, dispersed here and there in the solos, to make five bars when put together. All the rest being composed in two parts only.

These six concertos, in my opinion, (excepting some few short, slow movements, entirely calculated for the organ,) are composed in the true harpsichord style, and, when played according to the above rules, the vibration of the strings is seldom or never interrupted.

#### *Of the different Touches.*

As I would not conclude this work without communicating to the learner all I know of the power of the piano-forte, I thought proper to insert its various touches, which, when judiciously applied, must greatly contribute to the different expressions so necessary in many musical performances.

These touches are five in number, viz.

Legato,	Tied, or equal,
Staccato,	Distinct, or pointed,
Sdruciolato,	Sliding,
Staccatissimo,	Very distinct, or pointed,
Tremolato,	Quavering.

The legato is the touch that this treatise endeavours to teach, being a general touch fit for almost all kinds of passages, and by which the vibrations of the strings are made perfect in every note.

The staccato is expressed by purposely lifting up the fingers sooner than the length of the note requires, in order to give a certain distinction to some particular passages, by way of contrast to the legato; but, in my opinion, it is to be used seldom, and only when a good effect is expected from it.

The *sdruciolato* is never used but in scales of natural notes, without any short keys interfering betwixt them. And it is performed by sliding the nail of the forefinger over the keys in ascending, or nail of the thumb in descending. It is recommended here only as a whim, which, if applied in a lesson of humour, may afford a pleasing variety.

As is likewise *staccatissimo*, which, being played by striking every successive key with the point of one and the same finger, (generally the first,) makes a great contrast with the *sdruciolato*, being, as it were, a caricature of the fine contrast that is found between the legato and the staccato.

The tremolato is played by touching the same key with three different fingers, one after the other, viz. 3d, 2d, and 1st fingers, as quick as the hammer which strikes the string will permit. This touch is also whimsical.

#### CONCLUSION.

The fancy of composers is unbounded, and their seeking continually after novelty, occasions great variety in their works: I, therefore, should not be surprised if many passages were to be met with in music, composed for this instrument, that must be fingered differently from the rules I have laid down; but, in that case, this treatise must still have the good effect to furnish the practitioner a method of thinking; so that he should leave nothing to chance, but always choose his fingers from the dictates of his reason and taste.

#### ORGAN IN CHRIST CHURCH, ANTHONY-STREET, NEW-YORK.

The front of this organ is small, but correspondent to the general style of the building, which is Gothic. It were much to be wished that the builder had taken as much pains with the exterior of this instrument as he did with the interior, which latter is well executed, and produces an excellent effect.

The height is about 15 feet, width 11 feet; and depth 9 feet. Compass F in alt to GG.

#### GREAT ORGAN.

Open Diapason.	Stop Diapason.
Dulceano, to gamut G.	Principal.
Twelfth,	Fifteenth.
Cornet treble.	Sesquialtra bass.
Trumpet.	

#### SWELL ORGAN TO F.

Dulceano,	Stop Diapason.
Principal,	Open Diapason.
Trumpet,	Clarionet.

#### CHOIR ORGAN BASS.

Dulceano to gamut G.	
Stop Diapason,	Principal.

One octave of pedals communicating with the keys of the Great Organ.

The above organ was built by Mr. Corri, an ingenious mechanic, who emigrated to this country for the purpose of putting up the elegant organ in the old South Church, in Boston.

### ORGAN IN TRINITY CHURCH, NEW-YORK.

THIS organ is curiously constructed, the choir organ being made in part to serve for the fundamental parts of the great organ, by means of a communication between the two rows of keys; the great organ pressing down the keys of the choir, and the choir left to act for itself. This instrument was built by Mr. Holland, of London, in the year 1791, and in point of tone ranks very high. The height is about 22 feet, width 13 feet, and depth 9 feet. Compass F in alt. to GG.

#### GREAT ORGAN.

Open Diapason.	Open Diapason to gamut G.
Night Horn,	Fifteenth.
Sesquialtra, 3 ranks,	Cornet 4 ranks.
Trumpet.	

#### CHOIR ORGAN, IN CONJUNCTION WITH GREAT ORGAN.

Stop Diapason,	Dulceano.
Principal,	Flute.
Cremona.	

#### SWELL ORGAN.

Open Diapason,	Stop Diapason.
Principal,	Cornet.
Trumpet,	Hautboy.

### STATE OF MUSIC AMONG THE TURKS.

It was not until the reign of AMURATH, that this art was cultivated or known among the Turks. That prince having ordered a general massacre of the Persians at the taking of Bagdad, was so moved by the tender and affecting air of a Persian harper,\* that he retracted his cruel order, and put a stop to the slaughter. The musician was conducted, with four of his brother minstrels, to Constantinople: and by these the harmonious art was propagated among the Turks.

Under Mahomet the Fourth it flourished; and was almost brought to its perfection; principally through the means of Osman Effendi, who was himself a great master of the art, and formed a number of able scholars.

The first, however, that applied notes to the Turkish airs, was prince Cantemir. His book was dedicated to Sultan Achmet II., and is become very rare.

Although the Turks highly prize this work, they seldom use or imitate it; contenting themselves to compose and execute *memoriter*, according to their ancient custom; so difficult, it seems, is it to reduce to a regular scale of notation the theory of Turkish music. Not that it is without system and rules, as some have too rashly advanced; it has not only all the *times* and sounds of ours, but possessing quarter tones, is much richer in materials, and consequently more melodious than ours.

Niebuhr was misinformed when he said, That the Turks of rank would think themselves dishonoured by learning music. So far from this, it makes a usual part of their education. It is only in public that they disdain to sing or play.

Guer, and after him other writers, have asserted, that in the infirmary of the Seraglio there is a concert of vocal and instrumental music from morning to night, for the purpose of soothing the sufferings, and exhilarating the spirits of the sick and valetudinarian. But this is absolutely false, as the abaté Toderini was assured by a person who had been twenty years a physician of the seraglio.

\* The abaté Toderini, from whose valuable work the materials for this sketch are taken, used every means to find this celebrated piece of *Sach-Cule*, (for that is the name of this Persian *Timotheus*.) But it was never noted, it seems, and is only played by the greatest masters from tradition. In the Poetical Register, vol. VIII. there is an ode by the late Eyles Irwin, on the triumph obtained by the Persian musicians over the ferocity of Amurath.



The musical instruments used by the Turks are,

1. The *Keman*, resembling our violin. 2. The *Ajakli-Keman*, a sort of bass viol.
3. The *Sine-Keman*, or the viol d'amour.
4. The *Rebab*, a two-stringed bow-instrument, almost in the form of a sphere; but now little used.
5. The *Tambour*, an eight-stringed instrument, with a long handle, on which the scale of tones is marked. It is played upon with a small flexible plate of tortoise shell.
6. The *Nei*, which is a kind of flute made of cane, the sound of which approaches to that of the German flute, and sometimes to that of the human voice. This is the fashionable instrument among persons of rank.
7. The *Ghirif*, a flute of smaller size.
8. The *Mescal* is composed of twenty-three cane pipes of unequal length, each of which gives three different sounds from the different manner of blowing it.
9. The *Santur*, or psaltery, is the same with ours, and played upon in the same manner.
10. The *Canun*, or psaltery with catgut strings, on which the ladies of the Seraglio play, with a sort of tortoise-shell instrument.

These are all chamber instruments. The following are military ones.

1. The *Zurna*, a sort of oboe.
2. The *Kaba Zurna*, a smaller species of the same.
3. The *Boru*, a tin trumpet.
4. The *Zil*, a moorish instrument. What we call the cymbal.
5. The *Daul* is a large kind of drum, beaten with two wooden sticks.
6. The *Tombalek*, a small tympanum, or drum, of which the diameter is little more than half a foot.
7. The *Kios*, a large copper drum, commonly carried on a camel.
8. The *Triangle*.

9. An instrument formed of several small bells, hung on an inverted crescent, which is fixed on the top of a staff, about six feet high.

The band of the Sultan is truly grand, composed of the best musicians in Constantinople. They play in unison or in octaves, which practice, though hostile to harmony, in the musical sense of the word, is productive of grand martial effect, and is very imposing.

HARMONICON.

## Biographical.

*Memoir of W. CROTCH, Mus. D. Professor of Music in the University of Oxford.*

DR. CROTCH, the subject of the present memoir, was born at Norwich, July 5, 1775. His father, by trade a carpenter, an ingenious mechanic, and of good reputation, having a passion for music, of which, however, he had no knowledge, undertook to build an organ, on which, as soon as it would speak, he learned to play two or three common tunes, such as, *God save the King*; *Let Ambition fire thy mind*; and the *Easter Hymn*; with which, and such chords as were pleasing to his ear, he used to try the perfection of his instrument.

About Christmas, 1776, when Master Crotch was only a year and a half old, he discovered a great inclination for music, by leaving even his food to attend to it, when the organ was playing; and about Midsummer, 1777, he would touch the key-note of his particular favourite tunes, in order to persuade his father to play them. Soon after this, as he was unable to name these tunes, he would play the first two or three notes of them, when he thought the key note did not sufficiently explain which he wished to have played. But according to his mother's account it seems to have been in consequence of his having heard the superior performance of Mrs. Lulman, a musical lady, who came to try his father's organ, and who not only played on it, but sung to her own accompaniment, that he first attempted to play a tune himself: for, the same evening, after her departure, the child cried, and was so peevish, that his mother was wholly unable to appease him. At length, passing through the dining-room, he screamed and struggled violently to go to the organ,

in which, when he was indulged, he eagerly bent down the keys with his little fists, as other children usually do, after finding themselves able to produce a noise, which pleases them more than the artificial performance of real melody or harmony by others. The next day, however, being left while his mother went out, in the dining-room with his brother, a youth about fourteen years old, he would not let him rest till he blew the bellows of the organ, while he sat on his knee, and bent down the keys, at first promiscuously, but presently with one hand he played enough of *God save the King* to awaken the curiosity of his father, who, being in a garret, which was his workshop, hastened down stairs to inform himself who was playing this tune upon the organ. When he found it was the child, he could hardly believe what he heard and saw. At this time he was hardly two years and three weeks old, as appears by the register in the parish of St. George, Colgate, Norwich. Although he showed such a decided inclination for music, he could no more be prevailed on to play by persuasion, than a bird to sing.

When his mother returned, the father, with a look that at once implied joy, wonder, and mystery, desired her to go up stairs with him, as he had something curious to show her. She obeyed, and was as much surprised as the father, on hearing the child play the first part of *God save the King*. The next day he made himself master of the treble of the second part; and the day after he attempted the bass, which he performed nearly correct in every particular, except the note immediately before the close, which being an octave below the preceding sound, was out of the reach of his little hand. In the beginning of November, 1777, he played both the treble and bass of *Let Ambition fire thy mind*; an old tune, now called, *Hope, thou Nurse of Young Desire*.

Upon the parents' relating this extraordinary circumstance to their neighbours, they were laughed at, and advised not to mention it, as such a marvellous account would only expose them to ridicule. However, a few days afterward, Mr. Crotch being ill, and unable to go out to work, Mr. Paul, a master weaver, by whom he was employed, passing accidentally by the door, and hearing the organ, fancied he had been deceived, and that Crotch had staid at home, in order to divert himself on his favourite instrument. Fully prepossessed with this idea, he entered the house, and suddenly opening the dining-room door, saw the child playing on the organ, while his brother was blowing the bellows. Mr. Paul thought the performance so extraordinary, that he immediately brought two or three of the neighbours to hear it, who, propagating the news, a crowd of nearly a hundred persons came the next day to hear the young performer; and on the following days, a still greater number flocked to the house from all quarters of the city; till, at length, the child's parents were obliged to limit his exhibition to certain days and hours, in order to lessen his fatigue, and exempt themselves from the inconvenience of constant attendance on the curious multitude. At four years old, his ear for music was so astonishing, that he could distinguish at a great distance from any instrument, and out of sight of the keys, any note that was struck, whether A, B, C, &c. In this, Dr. Burney used repeatedly to try him, and never once found him mistaken, even in the half notes; a circumstance the more extraordinary, as many practitioners, and good performers, are unable to distinguish by ear, at the Opera, or elsewhere, in what key any piece or air is executed. At this early age, when he was tired of playing on an instrument, and his musical faculties appeared wholly blunted, he could be provoked to attention, even though engaged in any new amusement, by a wrong note being struck in any well-known tune; and, if he stood by the instrument when such a note was designedly struck, he would instantly put down the right, in whatever key the air was playing.

The extraordinary musical talents, exhibited by Dr. Crotch in infancy, was matured by study and practice, so that afterward he was enabled to attain the highest rank in his profession, as a professor of music.

Among the numerous musical compositions published by Dr. Crotch, we cannot help mentioning two which more particularly advanced his reputation; "*Palestine, a sacred Oratorio*," and "*Specimens of various kinds of Music*," in three vols. folio. He is also author of a work on the *Elements of Musical Composition*.

*Europ. Mag.*